

REMARKS

In the current office action, the Examiner rejected claims 1-7. The Applicants have requested claims 1-7 be amended; no claims are cancelled.

The support for the claim amendments to claims 1, 2 and 7 can be found in the specification as originally filed, including, but not limited to, Example 4 (p14, line 13), Example 5 (p16, line 9) and Example 6 (p16, line 24) and in originally filed claims 2-5.

The support for the claim amendment to claim 3 can be found in the specification as originally filed, including, but not limited to, Example 11 (p.22 line 12).

The support for the claim amendment to claim 4 can be found in the specification as originally filed and original claim 5.

The support for the claim amendment to claim 5 can be found in the specification as originally filed, including, but not limited to, Example 5 (p16, line 9).

The applicants believe no new matter is introduced as a result of such amendment.

Objections to Oath/Declaration

The applicants have corrected the defects noted on the oath/declaration as pointed out by the Examiner.

Rejections Under 35 USC 102(a)

The Examiner rejected claims 1, 2 and 6 as anticipated by Charalambous (WO 00/25814). The Examiner stated that Charalambous disclosed a mimotope having a sequence identical to that of SEQ ID NO. 1. Charalambous discloses that the mimotope was isolated using a monoclonal antibody particular for a surface lipooligosaccharide. The applicants have amended claims 1 and 2; dependent claim 6 incorporates these amendments. Amended claim 1 recites a composition comprising a peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. Amended claim 2 recites a composition comprising at least one peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin wherein said peptide is fused to a protein, a second peptide, a chemotherapeutic agent or an imaging agent.

However, Charalambous does not teach or suggest a peptide that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. The compositions provided by the applicants provide such a peptide. Furthermore, one of ordinary skill in the art would not have been able to predict that the peptide disclosed by applicants would be effective at delivering a protein, a second peptide, a chemotherapeutic agent or an imaging agent when the foregoing are fused with the peptide disclosed by applicants and illustrated in the Examples.

Rejections under 35 USC 102(b)

The Examiner rejected claims 1-3 and 6-7 as anticipated by Smith et al. (WO 9853804). The Examiner stated that Smith disclosed a composition having a peptide capable of binding muscle cells in vivo and having a sequence identical to that of SEQ ID NO. 1. Charalambous discloses that the peptide was isolated using bio-panning against C₂C₁₂ myotubes. The applicants have amended claims 1, 2 and 7; dependent claim 3 and 6 incorporate these amendments. Amended claim 1 recites a composition comprising a peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. Amended claim 2 recites a composition comprising at least one peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin wherein said peptide is fused to a protein, a second peptide, a chemotherapeutic agent or an imaging agent. Amended claim 7 recites a composition comprising a construct containing a DNA sequence which encodes at least one of the peptide of the formula HAIYPRH which is also bound to a nucleotide sequence which encodes a peptide other than HAIYPRH wherein said at least one of the peptide of the formula HAIYPRH which is also bound to a nucleotide sequence which encodes a peptide other than HAIYPRH binds the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin.

However, Smith does not teach or suggest a peptide that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. The compositions provided by the applicants provide such a peptide. Furthermore, one of

ordinary skill in the art would not have been able to predict that the peptide disclosed by applicants would be effective at delivering a protein, a second peptide, a chemotherapeutic agent or an imaging agent when the foregoing are fused with the peptide disclosed by applicants and illustrated in the Examples.

Rejection Under 35 USC 102(e)

The Examiner rejected claims 1-4 and 7 as anticipated by MacDonald et al (6,201,104). The Examiner stated that MacDonald disclosed a composition and methods for inhibiting angiogenesis related to tumor growth by binding to angiogenesis related proteins such as angiostatin and endostatin. The Examiner cited MacDonald as disclosing a peptide having the sequence HAIYPRHGGGS. The applicants have amended claims 1, 2 and 7; dependent claims 3 and 4 incorporate these amendments. Amended claim 1 recites a composition comprising a peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. Amended claim 2 recites a composition comprising at least one peptide having the sequence of SEQ ID NO: 1 that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin wherein said peptide is fused to a protein, a second peptide, a chemotherapeutic agent or an imaging agent. Amended claim 7 recites a composition comprising a construct containing a DNA sequence which encodes at least one of the peptide of the formula HAIYPRH which is also bound to a nucleotide sequence which encodes a peptide other than HAIYPRH wherein said at least one of the peptide of the formula HAIYPRH which is also bound to a nucleotide sequence which encodes a peptide other than HAIYPRH binds the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin.

However, MacDonald does not teach or suggest a peptide that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin. The compositions provided by the applicants provide such a peptide. Furthermore, one of ordinary skill in the art would not have been able to predict that the peptide disclosed by applicants would be effective at delivering a protein, a second peptide, a chemotherapeutic agent

or an imaging agent when the foregoing are fused with the peptide disclosed by applicants and illustrated in the Examples.

Rejections Under 35 USC 103(a)

The Examiner rejected claim 5 as unpatentable over MacDonald (discussed above) and Hazum and Tarasova. As neither Hazum and Tarasova teach or suggest a peptide that is capable of binding to the transferrin receptor without disrupting the ability of the transferrin receptor to bind transferrin, the applicants respectfully suggest the rejection is not supported for the reasons discussed above in regard to MacDonald.

CONCLUSION

The above identified applicants respectfully request the Commissioner of Patents consider the enclosed remarks and enter the following submission into the record, in response to the Examiner's Office Action dated 12-1-2006.

If any additional fees are due in addition to any fees that may have been paid in conjunction with this response, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Account 50-0954. If any extension of time for the accompanying response or submission is required, applicants request that this be considered a petition for such extension of time.

Reconsideration in light of this submission is respectfully requested and Applicants respectfully request the application be processed for allowance. If the Examiner requires additional action that may benefit from a telephone call, Applicant invites a call to its attorney of record, T. Gregory Peterson (Reg. No. 45,587) at 205-521-8084. E-mail correspondence and transactions to gpeterson@bradleyarant.com are authorized and encouraged.

Application No. 10/806,477
Reply to Office Action Dated 12-1-2006

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'T. Gregory Peterson', with a long horizontal flourish extending to the right.

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